AWARENESS OF FACTORS RESPONSIBLE FOR VESICOVAGINAL FISTULA AMONG HAUSA WOMEN IN NIGERIA

***Dr. Oluwakemi Ajike Kolade RN, PhD[1], Victoria Funmilayo Hanson, PhD[2],**

Olufemi Yinyinola Makinde (RNM, RPHN, RNE, BNSc, MSc,. MEd[3],

Peter Babatunde Abolarinwa RN, BNSc[4]

1. Faculty of Nursing Sciences,Ladoke Akintola University of Technology, Ogbomoso

2. Ras Al Khaimah Medical and Health Science University, RAK College of Nursing, Ras Al Khaimah, United Arab Emirate.

3. Faculty of Nursing Sciences,Ladoke Akintola University of Technology, Osogbo.

4. Hospital Management Board, Ado-Ekiti, Ekiti State

ABSTRACT

Vesico-vaginal fistula (VVF) has been a major health challenge with consequences on the affected women's health physically and emotionally, as well as their financial and social status. Delivery of a baby should be a period of joy, but for more than half a million women, their pregnancy and childbirth end in death while some develop vesico vaginal fistula. Vesicovaginal fistula is an abnormal communication between the bladder and the vagina leading to continuous leakage of urine through the vagina. Little is known about the perception of pregnant women about obstetric fistula and this group of women are those who are at risk of the disease. This *could increase in maternal morbidity rate and impede development goals such as Sustainable Development Goals SDGs in Nigeria.* ***Aim:*** *investigate the awareness of factors responsible for vesico-vaginal fistula among Hausa women in Nigeria.* ***Research design:*** *The descriptive survey design was used in this study and Hausa women within or above the reproductive age bracket of 13-20 was used.* ***Setting:*** *Shasha Community in Ado Local Government area, Ekiti State, Nigeria. A simple random sampling technique.* ***Sample****: 200 respondents Tool: questionnaire was used to obtain information from respondents and was subjected to validity and reliability. Data collected were analyzed using frequency and percentage and ANOVA.* ***Result:*** *The study revealed that the level of awareness of Vesico vaginal fistula and its risk associative factors among Hausa women is very low. Also, the socio-economic status of Hausa women in the Hausa speaking community is very low and this has affected the level of awareness of VVF and its associative factors. In addition, several harmful practices exist in the Hausa speaking community.* ***Conclusion:*** *socio-economic status of Hausa women is an important factor that could increase the level of awareness of VVF and its causative factors. it is important that the government and other NGO interested in the empowerment of women should endeavor to empower Hausa women to increase their socio-economic status in the community towards enhancing the level of awareness of VVF, and its associative factors. Word count: 264 words*

Key words*: Awareness, Factors Responsible, Vesico-vaginal fistula, Hausa Women*

Introduction

The delivery of a baby should be a period of happiness, but for more than half a million women during pregnancy and childbirth end in death while some develop vesico vaginal fistula. Vesicovaginal fistula is an abnormal link between the bladder and the vagina leading to continuous leakage of urine through the vagina. Not much is known about the perception of pregnant women about fistula and this group of women are those who are at risk of the disease. This could increase in maternal morbidity rate and impede development goals such as Sustainable Development Goals SDGs in Nigeria (Ezeonu, Ekwedigwe, Isikhuemen, Eliboh, Onoh, Lawani, et al. 2017)

Health challenge has been a major issue that has attracted attention at global level and this has led to its inculcation into development strategies and efforts such as the Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs). The need to cushion and correct this unequal development between developed and developing countries where Nigeria belong calls for the need to initiate another development effort which was to continue from the MDGs called the SDG.

Having considered the 17 Sustainable Development Goals (SDGs), it is paramount to draw attention to goal three: ensuring good health and well-being. The need to address health issues in Africa is attributed to the fact that, there are several health challenges in Africa, Nigeria not excluded. Common among these health challenges are HIV/AIDS, Ebola, malaria, Diarrhea, epilepsy, tuberculosis, Vesico -vaginal fistula (VVF), among others. Studies have focused on several diseases such as HIV/AIDS (Breuer, Myer, Struthers and Joska , 2011; Kharsany and Karim, 2016); Ebola (Althaus, Low, Musa, Shuaib and Gsteiger, 2015; Nigeria Centre for Disease Control, 2017); malaria (Erhabor, Adias and Hart, 2010; Jenavine, Njoku, Agwu, Ijem and Nwinyimagu, 2015); Diarrhea (Ibrahim, Odoemena and Ibrahim, 2000; Black and Lanata, 2002; Dairo, Ibrahim and Salawu, 2017) With growing concerns, however, VVF has been a relatively hidden problem because it is common among the most marginalized members of the society such as the young, poor and illiterate women living in remote areas, who are far from health care facilities (Amina, 2013). Hence, due to this sensitivity to a particular gender, there is a need to focus on Vesico-vaginal fistula (VVF) because of its effect on morbidity and mortality of women. Ensuring good health and well-being as a major SDG cuts across increasing the level of awareness and the factors affecting Vesico-vaginal fistula (VVF) among women in Nigeria. So much has been written on vesico-vaginal fistula (VVF) but there is little on the patients' perspective of the condition and the factors that causes it (Hassan and Ekele, 2009).

According to Spurlock (2016), Vesicovaginal fistula (VVF) is a subtype of female urogenital fistula (UGF) which is an abnormal fistulous tract extending between the bladder and the vagina that allows the continuous involuntary discharge of urine into the vaginal vault. They have elastic effect on patients such as medical sequelae from the fistulas, affect patient's emotional well-being, among others.

Each year between 50 000 to 100 000 women worldwide are affected by obstetric fistula, an abnormal opening between a woman’s genital tract and her urinary tract or rectum. The development of obstetric fistula is directly linked to one of the major causes of maternal mortality. Women who experience obstetric fistula suffer constant incontinence, shame, social segregation and health problems. It is estimated that more than 2 million young women live

with untreated obstetric fistula in Asia and sub-Saharan Africa.(WHO fact sheets 2018) In Nigeria, The rate of vesico-vaginal fistula stands at 350 cases per 100,000 deliveries and with an estimated number of untreated VVFs in Nigeria at between 800,000 and 1,000,000 which reflects a ravaging state of Nigerian women in the country (Spurlock, 2016). Vesico Vaginal Fistula (VVF), is a major cause of severe morbidity and potential mortality especially among women and young girls, which can result in marital disruption, rejection and, eventual destitution (Daru, Karshima, Mikah, and Nyango, 2011).

According to the Guardian (2002), Nigerian women are under serious siege of VVF as the country accounts for 40% of the global burden of VVF. Wall, Karshima, Kirschner and Arrowsmith (2004) noted that, the health problem of VVF is high in Nigeria where at least 1% of pregnant women die of obstetric complications and where obstructed labor is a leading cause of maternal death. Obstructed labor during pregnancy often develops to a vesicovaginal fistula (Harrison, 1985).According to Stamatakos, Sargedi, Stasinou, and Kontzoglou (2014), Vesicovaginal fistula (VVF) is still a major cause for concern in many developing countries such as Nigeria and represents a significant morbidity in female urology. The symptoms which include continual wetness, odor, and discomfort cause serious social problems among patients. The etiologies of VVF are much different in the developed world as compared with the developing world such (Hassan and Ekele, 2009).Health care services are inadequate to meet the needs of the childbearing population throughout Nigeria as a whole and this has led to health challenge such as VVF in Nigeria (Wall et al., 2004).

In addition, awareness about VVF and its causative factors is still low in developing countries such as Nigeria (Tebeu, de Bernis, Boisrond, Le Duc, Mbassi and Rochat, 2008; Kasamba, Kaye, and Mbalinda, 2013; Amna, Sirichand and Nadeem, 2015). Also, Omiunu (2015) affirmed that awareness and knowledge about particular health challenge could lead to individuals taken steps to cushion such health challenge. It is therefore important to note that, the lack of awareness of VVF might deter the efforts put in place to cushion VVF towards attainment of SDGs in Nigeria and Africa. Information on community awareness about obstetric fistula will alert health professionals and support organizations about the need for primary prevention through sensitization of rural communities about the condition (Kasamba et al., 2013). Hence, in the fight to ameliorate Vesicovaginal fistula towards the attainment of the SDGs in Nigeria, there is a need to investigate people awareness on the causes. A number of factors such as demographic, biological, social, economical, cultural or environmental factors could contribute to the prevalence of VVF in developing countries such as Nigeria (Hassan and Ekele, 2009). Other factors include obstetrical trauma and iatrogenic injury encountered during pelvic surgeries (Amna et al., 2015).Also, women who survive obstructed labor during pregnancy often develop a vesico-vaginal fistula (Harrison, 1985; Amna et al.,
2015). In addition, Amna et al. (2015) noted that the socio economic variables or demographic characteristics of individuals such as occupation, age, among others can also be a considerable factor in causing VVF. Hence, the causes of VVF are elastic and there is need to investigate the awareness of women of VVF especially among Hausa women. The need to focus this study on Hausa women is hinged on the fact that, obstructed labor which is common in the North (the Hausa speaking part of Nigeria) is directly related to the custom of early marriage in Nigeria which is done frequently between the ages of 13 years and sometimes before the onset of menstruation as early as 11 years. Early marriage invariably leads to early sexual contact and subsequent pregnancy at a time when a

young girl is not adequately and physically developed to permit the passage of the baby with relative ease. This can lead to a prolonged and obstructed labor that could damage the urinary track leading to the misery of fistula, VVF

Aim of study: *investigates the awareness of factors responsible for vesico-vaginal fistula among Hausa women in Nigeria* **Research questions**:

1. Do Hausa women have appropriate knowledge about VVF?
2. Are Hausa women aware of the risk factors that could cause VVF?
3. What are other harmful practices that could cause VVF among Hausa women?

Hypothesis

1. There is no significant difference in the awareness of VVF with respect to socio-economic factors among Hausa women
2. There is no significant difference in the risk factors of VVF with respect to socio-economic factors among Hausa women

Literature Review

Vesico Vaginal Fistula (VVF) is a major and serious Fistula and reproductive health problem common among women in the developing countries of the world. There are different types of Fistula based on the particular organ(s) it affects and could include the following (Kees, 2007):

a. Vesico vaginal fistula (VVF) means the fistula that connects the urinary bladder and the vaginal.
b. Recto Vaginal Fistula (RUF) is the fistula that connects the rectum and the vaginal.
c. Urethra: vesico vaginal fistula (UU.VF) are the fistula that connects the urethra urinary bladder and the vaginal.
d. Juxta - Cervical fistula (J.C.F) is the fistula that occurs side by side by the cervix.
e. Vesico Cervical Vaginal Fistula (UCVF) means the fistula that connects the urinary cervix and the vaginal.
f. Uretho - Vesico vaginal fistula (U.V.V.) is the fistula that connects the urethra urinary bladder and vaginal.
g. Urethra cervical fistula (U.C.F.) means the fistula that connects the urethra and cervix.
h. Genitor urinary fistula (G.R.F.) means the fistula that connects the genital and the urinary tract.
i. Genitor - Rectal fistula (G.F) is the fistula that connects the genitals urinary tract and rectal canal.
j. Genitor urinary rectal fistula (G.V.R.F.) is the fistula that connects the genitals urinary tract and rectal canal.
k. Urine fistula (U.F.) means the fistula that leads to the constant leakage of urine.
l. Stool fistula (S.F) is the fistula that leads to the constant leakage of stool.
m. Obstetric fistula (G.F) is one that occur at childbirth,
n. Surgically produced fistula (S.P.F.) is the one that occurs as a result of the surgical operation such as removal of the uterus (total hysteotomy).

In Nigeria, one out of 18 women will die from complications of child birth (United Nations Funds Population Agency (UNFPA), 2015). Fistula usually occurs from a prolong labor, the

baby usually dies while the mother may have extensive tissue damage which could lead to Vesico vaginal fistula. Amina (2013; Hassan 2013; Imelda 2015 and Isiah 2016) noted that VVF is more common among the young, poor and uneducated rural women in the developing world.

Morphy (2008) expressed that the VVF patients have several societal issues which could affect their psychological state. For example, such VVF patients wakes up to be wet and soaked that they feel so ashamed and humiliated. Also, Ejembi (2009) noted that the women whose first babies were still born may never get married nor have children again. For fear of reoccurrence. This is because, husband divorce them while relatives, parents and friends normally abandon them. Furthermore, they eventually end up lacking the economic status to cater for themselves and also to pay for the cost of their treatment. Hence, most of them end up with begging and prostitution.

There are different causes of VVF. According to Kees (2016), approximately 80 percent of fistula cases reported in Nigeria are due to unresolved obstructed labor during childbirth. In addition, factors such as demographic, biological, socio-economic, cultural, among others could lead to VVF (Hassan and Ekele, 2009). Obstetrical trauma, iatrogenic injury and other complications encountered during pelvic surgeries could also lead to VVF (Amna et al., 2015). Despite these known causative factors provided by studies, Tebeu et al. (2008); Kasamba et al. (2013); Amna et al. (2015); among others have noted that the level of awareness of VVF and the causative factors are very low in development countries such as Nigeria. This could raise the likelihood for its prevalence in Nigeria and thus retardate the propensity to attain the SDGs in Nigeria. Hence, there is need for this study to investigate the awareness of Hausa women of VVF and its causative factors in Nigeria.

Subjects and Method

2.1 Study design

Descriptive survey design was adopted for the study.

2 .2 Setting

Shasha Community in Ado Local Government area, Ekiti State, Nigeria. This location can be mistaken for any typical Northern town in terms of language, culture settings and occupation.

2.3 Subjects

Hausa women who are within or above their reproductive age bracket of 13-20 are the unique specific population This location can be likened for any typical Northern town in terms of language, culture settings and occupation. A simple random sampling technique was adopted to select 200 respondents from the population of study. The sample size of the study was determined by using Taroyamme formula that relates the desired population with the assumed population with a constant precision value of 0.05 as given below $n = N/1+N(e)^2$ **Where:**

n= population to be determined

N= Total population

e= significance level (0.05)

n= 400/1+400(0.05)

n= 400/1+1 n= 200

2.4 Tool of the study

One tool was developed by the researchers; a structured interviewing questionnaire which consists of four major sections namely: section one demographic characteristics of respondents,

awareness of VVF, awareness of causative factors of VVF and other harmful practices that could also lead to VVF among the Hausa women. For section two and three, the variables of this study was captured in a likert scale of four namely agreed, strongly agreed, disagreed and strongly disagreed where the respondents would be allowed to tick only one out of the choice provided.

2.5 Method

Ethical considerations:

Ethical approval was obtained from the ethical committee of Ladoke Akintola University of Technology, Ogbomosho and the Gynecology & Obstetric Department, manager of the health management Board, Ekiti state.

An informed oral consent was obtained from all participants who were willing to participate in the study after explanation of the purpose of the study, the benefits, the nature, the process and expected outcomes of the study. All rights, anonymity and confidentiality of the respondents were respected and they have the right to withdraw from the study at any time regardless of the cause.

Tool and validity

The content and construct validity of the research instruments was done to ensure that items in the instrument meet the desired research objective, questions and hypotheses of the study. Also, a reliability analysis was done from 20questionnaires administered (10% of the sample size) using the Cronbach's alpha and yielded coefficients of .73 for awareness of VVF; 72 for awareness of causative factors of VVF.

Field work: -

Data was collected through a period of five weeks from February 2017 to April 2017 on Fridays after the mosque prayers. 70 % of the women were illiterates so questions were interpreted to each woman in the local language by four research assistant who were nurses. Researchers met the women interview was carried out in the waiting area of the mosque and it took about 30 minutes for each one.

Statistical analysis:

Data was collected and analyzed by computer program SPSS version 21. The quantitative variables were presented in tables as numbers and percentage; and analyzed by Chi-square test. A p-value < 0.05 was considered to be statistically significant. ANOVA was used to analyze the association on the awareness of VVF with socio-economic factors among Hausa women and association of the risk factors of VVF to socio-economic factors among Hausa women.

2.6 Results

The result of this study is presented in three subsections namely: demographic characteristics; the responses to research questions and the hypotheses testing presentation.

2.6.1 Demographic Characteristics of Respondents

The demographic characteristics of respondents are presented in Table 1.

Table 1: **Demographic Characteristics of Respondents**

	Frequency	Percent
Marital Status	Married	70	36.3

	Others	119	61.7
	Missing System	4	2.1
	Total	193	100.0
Level of education	Arabic Education	50	25.9
	Primary Education	51	26.4
	Secondary education	57	29.5
	Higher education	29	15.0
	Missing System	6	3.1
	Total	193	100.0
Occupation of women	Not employed	26	13.5
	Civil servants	55	28.5
	Works in a private organization	32	16.6
	Entrepreneur	59	30.6
	Others	14	7.3
	Missing System	7	3.6
	Total	193	100.0
Age group	Below 17	56	29.0
	18-21	123	63.7
	Missing System	14	7.3
	Total	193	100.0
Age at which you got married	Below 14 Years	37	19.2
	15-17 Years	61	31.6
	18-21 Years	38	19.7
	21 Years and Above	52	26.9
	Missing System	5	2.6
	Total	193	100.0
Age at which you got pregnant	Below 17	43	22.3
	18-21	69	35.8
	23 and above	70	31.1
	Missing System	11	5.7
	Total	193	100.0
Place of delivery	Hospital	82	42.5
	At home	94	48.7
	No response	16	8.3
	Missing System	1	.5
	Total	193	100.0

The result in Table 1 shows that respondents who belonged to other groups of marital status such as divorced, widowed, separated has a higher percentage (62%); those with secondary education has the highest percentage (29%); respondents who are entrepreneur has the highest percentage (31%); those between the age brackets 18-21 years has the highest percentage (67%); Those who married between the age brackets 15-17 Years has the highest percentage (32%); those who were pregnant at the age brackets 18-21 years has the highest percentage (36%); and those who

often give birth at home has the highest percentage (49%). This implies that the socio-economic status of women used in this study is very low.

2.6.2 Research Question Analysis

The section is divided into three sub-sections with respect to the research questions.

Research Question One: Do Hausa women have appropriate knowledge about VVF?

The responses of respondents to research question one is presented in Table 2

Table 2: Distribution of appropriate knowledge about VVF

		Frequency	Percent
Have you heard about Vesico vagina fistula	Strongly Disagreed	14	7.3
	Disagreed	79	40.9
	Agreed	45	23.3
	Strongly Agreed	51	26.4
	Missing System	4	2.1
	Total	193	100.0
Vesico vaginal fistula suffer loneliness due to marriage separation and family castigation	Strongly Disagreed	13	6.7
	Disagreed	69	35.8
	Agreed	50	25.9
	Strongly Agreed	58	30.1
	Missing System	3	1.6
	Total	193	100.0
Vesico vagina fistula is an abnormal hole between vagina and urinary bladder	Strongly Disagreed	15	7.8
	Disagreed	73	37.8
	Agreed	49	25.4
	Strongly Agreed	50	25.9
	Missing System	6	3.1
	Total	193	100.0

The result in Table 2 shows that only approximately 50% have heard of Vesico vagina Fistula. Also, 56% stated that Vesico vaginal fistula patients suffer loneliness due to marriage separation and family castigation; and 51% stated that Vesico vagina fistula is an abnormal hole between vagina and urinary bladder. This implies that Hausa women as used in this study are averagely aware of Vesico vagina fistula.

2.6.3 Research Question Two: Are Hausa women aware of the risk factors that could cause VVF?

The responses of respondents to research question two is presented in Table 3

Table 3: Awareness of Risk Factors associated with VVF

		Frequency	Percent
Cultural belief of giving birth at home contributes to VVF	Strongly Disagreed	20	10.4
	Disagreed	53	27.5
	Agreed	55	28.5
	Strongly Agreed	58	30.1
	Missing System	7	3.6
	Total	193	100.0
Traditional beliefs of not eating diet causes VVF	Strongly Disagreed	16	8.3
	Disagreed	65	33.7
	Agreed	62	32.1
	Strongly Agreed	47	24.4
	Missing System	3	1.6
	Total	193	100.0
Inadequate nutrition and proper feeding cause VVF	Strongly Disagreed	17	8.8
	Disagreed	84	43.5
	Agreed	49	25.4
	Strongly Agreed	40	20.7
	Missing System	3	1.6
	Total	193	100.0
Financial difficulties contribute to development of VVF	Strongly Disagreed	33	17.1
	Disagreed	55	28.5
	Agreed	38	19.7
	Strongly Agreed	62	32.1
	Missing System	5	2.6
	Total	193	100.0
Prolonged labour causes VVF	Strongly Disagreed	20	10.4
	Disagreed	53	27.5
	Agreed	58	30.1
	Strongly Agreed	58	30.1
	Missing System	4	2.1
	Total	193	100.0
Leakage of urine from VVF can cause vulva excoriations	Strongly Disagreed	31	16.1
	Disagreed	48	24.9
	Agreed	52	26.9
	Strongly Agreed	55	28.5
	Missing System	7	3.6
	Total	193	100.0
	Strongly Disagreed	26	13.5
	Disagreed	94	48.7
	Agreed	45	23.3
	Strongly Agreed	24	12.4
	Missing System	4	2.1

Early marriage cause VVF can	Total	193	100.0
	Strongly Disagreed	38	19.7
	Disagreed	87	45.1
	Agreed	29	15.0
	Strongly Agreed	35	18.1
	Missing System	4	2.1
Home delivery causes VVF	Total	193	100.0
	Strongly Disagreed	17	8.8
	Disagreed	87	45.1
	Agreed	51	26.4
	Strongly Agreed	32	16.6
	Missing System	6	3.1
Traditional birth attendants cause VVF	Total	193	100.0
	Strongly Disagreed	23	11.9
	Disagreed	92	47.7
	Agreed	39	20.2
	Strongly Agreed	33 6	17.1
	Missing System	193	3.1
Carelessness of midwives causes VVF	Total		100.0

The result in Table 3 shows that 59% stated that cultural belief of giving birth at home can contributes to VVF; 57% stated that traditional beliefs of not eating diet can causes VVF; 46% stated that inadequate nutrition and proper feeding can cause VVF; and 52% stated that financial difficulties can contribute to development of VVF. In addition, 60% stated that prolonged labour can causes VVF; 55% stated that leakage of urine from VVF can cause vulva excoriations; 36% stated that early marriage can cause VGF; 33% stated that home delivery can causes VGF; 43% stated that traditional birth attendants can cause VGF; and 27% stated that carelessness of midwives can causes VVF. This implies that, awareness of the risk associative factors of VVF is average among Hausa women used in this study.

2.5.4 Research Question Three: What are other harmful practices that could cause VVF among Hausa women?

The responses of respondents to research question three is presented in Table 4

Table 4: harmful practices that could cause VVF

Harmful Cultural Practice				
	Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	Early Marriage		10.4		10.4
	Female Genital mutilation	20 79	40.9	10.4 41.1	51.6
	Home delivery		21.2		72.9
	Non-Attendance of male health personnel during labour	41 52	26.9	21.4 27.1	100.0
	Total	192	99.5	100.0	
Missing	System	1	.5		
Total		193	100.0		

The result in Table 4 shows the several harmful practices in the Hausa speaking community. The result shows that Female genital Mutilation is the next (41%); followed by NonAttendance of male health personnel during labour (27%); followed by home delivery (21%). Early marriage has the least frequency (10%) but also an essential harmful practice among the Hausa speaking community in Nigeria. This implies that there are several harmful practices that could cause VVF in the Hausa speaking community in Nigeria.

2.5.5 Research Hypotheses Analysis

The following hypothesis below are subject to test at 0.05 level of significance:

Ho_1: There is no significant difference in the awareness of VVF with respect to socioeconomic factors among Hausa women

The ANOVA result for hypothesis one is presented in Table 5. **Table 5: ANOVA result for hypothesis one**

Tests of Between-Subjects Effects Dependent Variable: Awareness of VVF					
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	165.611[a]		41.403	12.518	.000
Intercept				54.612	
Marital status	180.619		180.619	.017 .865	.000
Age	.056	4	.056	18.721	.897
Occupation	2.862		2.862	14.609	.354
Education level	61.915	1 1	61.915		.000
	48.316	1 1	48.316		.000
Error		1			
Total	515.942		3.307		
Corrected Total	11619.000	156 161			
	681.553	160			

	a. R Squared = .243 (Adjusted R Squared = .224)				

The result in Table 5 shows that only level of education and occupation of respondents are significant ($p<0.05$); other socio-economic variables were not significant ($p>0.05$). This implies that level of education and occupation of Hausa women can increase their awareness of VVF hence, the importance attach to the level of education and occupation of women as important variables to increase awareness of VVF.

2.6.6 Ho_2: There is no significant difference in the awareness of the risk factors of VVF with respect to socio-economic factors among Hausa women

The ANOVA result for hypothesis two is presented in Table 6.

Table 6: ANOVA result for hypothesis two

Tests of Between-Subjects Effects					
Dependent Variable: Awareness of factor causing VVF					
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1066.484[a]	4	266.621	16.021	.000
Intercept	1810.569	1	1810.569	108.795	.000
Marital status	.383	1	.383	.023	.880
Age	17.667	1	17.667	1.062	.305
Occupation	582.867	1	582.867	35.024	.000
Education level Error	195.525	1	195.525	11.749	.001
Total	2346.529	141	16.642		
Corrected Total	101486.000 3413.014	146 145			
	a. R Squared = .312 (Adjusted R Squared = .293)				

The result in Table 6 shows that only level of education and occupation of respondents are significant ($p<0.05$); other socio-economic variables were not significant ($p>0.05$). This implies that level of education and occupation of Hausa women can increase their awareness of the causes of VVF hence, the importance attach to the level of education and occupation of women

as important variables to increase the awareness of the associative factors that could cause VVF especially among women in Nigeria.

Discussions of Findings

The findings of this study revealed the socio-economic status of Hausa women in the Hausa speaking community used in this study is very low. In addition, the level of education and occupation of respondents are significant and can increase the level of awareness of VVF and also the risk factors that could cause VVF. This supports the work of Amina (2013); Hassan (2013); Imelda (2015) and Isiah (2016) that VVF is more common among the young, poor and uneducated women in the developing world such as Nigeria as presented in this study. Also, the findings supports the works of Hassan and Ekele(2009) and Amna et al. (2015) that several factors such as demographic factors are associated with the causes of VVF among women. This also support the work of Hassan and Ekele(2009) that some factors such as demographic, biological, social, economical, cultural or environmental factors could contribute to the prevalence of VVF in developing countries such as Nigeria. In addition, this supports the works of UNFPA (2015); Amina (2013); Hassan (2013); Imelda (2015) and Isiah (2016) that VVF usually occurs from a prolong labor, and may extend to tissue damage in the mother.

The Hausa women as used in this study are averagely aware of Vesico vagina fistula and its risk associative factors. This shows a variation from the works of Tebeu et al. (2008); Kasamba et al. (2013); Amna et al. (2015); among others that there is still very low level of awareness of VVF and its causative factors in developing countries such as Nigeria. This variation could be why the works of Wall et al. (2004); Guardian (2002); Stamatakos et al. (2014); Waaldijk (2004) and Spurlock (2016) stated that the rate of VVF is very high especially in Nigeria. The high increase of VVF is attributed to the work of Omiunu (2015) that a high level of awareness could lead to initiating some steps to cushion such health challenge. With the variation and average awareness level of VVF and its causative factors as presented from the findings of this study, it is important to draw attention to the fact that Hausa women may be unable to cushion the elastic effect of VVF due to their level of awareness.

In addition, several harmful practices in the Hausa speaking community include Female genital Mutilation; Non-Attendance of male health personnel during labour; home delivery; early marriage; among others. This boosts the works of Hassan and Ekele(2009); Daru et al.(2011); Amina (2013); Stamatakos et al. (2014); Waaldijk (2004); Spurlock (2016) that VVF has been a relatively difficult health problem and challenge especially in developing countries such as Nigeria.

Conclusion

In conclusion, the level of awareness of Vesico vagina fistula and its risk associative factors among Hausa women is very low which needs empowerment program. Also, the socioeconomic status of Hausa women in the Hausa speaking community used in this study is very low and this has affected the level of awareness of VVF and its associative factors. In addition, several harmful practices that exist in the Hausa speaking community include Female genital Mutilation; Non-Attendance of male health personnel during labour; home delivery; early marriage; among others should also be addressed to reduce maternal mortality and morbidity among women.

Recommendations

The study recommends that:

i. Socio-economic status of Hausa women being an important factor that could increase the level of awareness of VVF and its causative factors, it is important that the government and other NGO interested in the empowerment of women should endeavour to empower Hausa women to increase their socio-economic status in the community towards enhancing the level of awareness of VVF, and its associative factors.

ii. Also, Hausa pregnant women should be subjected to training intervention on VVF and its associative factors by various hospitals so as to increase the level of awareness of VVF and its associative factors.

iii. It should also be mandated that women know their VVF status from various hospitals after delivery in cases of early marriage client. This test can be provided for free and make as a pre-requisite to obtain any medical attention in various hospitals in Nigeria.

Acknowledgment: We would like to acknowledge the study participants for their participation and without them; the research would not be accomplished **Conflict of interest:** The authors declared no conflict of interest.

REFERENCES

Althaus C.L., Low N., Musa E.O., Shuaib F. and Gsteiger S., (2015), Ebola virus disease outbreak in Nigeria: Transmission dynamics and rapid control, Epidemics11: 80-84, https://www.sciencedirect.com/science/article/pii/S1755436515000341

Amina, E. S. (2013) "Taskforce on VVF". A paper presented at Katsina, June 7th.

Amna A., Sirichand P. and Nadeem F., (2015), Women Perception and Awareness about Genitourinary Fistula, Liaquat Uni Med Health Science 14(03),129-132

Black RE and Lanata CF. (2002) Epidemiology of Diarrheal Diseases in Developing Countries, in Infections of the Gastrointestinal Tract, 2nd ed. Ravdin, H. B. Greenberg, Ed. 2002. Philadelphia, Lippincott, Williams, and Wilkins.

Blanchfield L. and Lawson M.L. (2010), The Millennium Development Goals: The September 2010 U.N. High-level Meeting, Congressional Research Service, Prepared for Members and Committees of Congress, retrieved from https://fas.org/sgp/crs/row/R41410.pdf

Breuer E, Myer L., Struthers H., Joska J.A. (2011), HIV/AIDS and mental health research in sub-Saharan Africa: a systematic review, African Journal of AIDS Reserach, 10(2):101-22. doi: 10.2989/16085906.2011.593373.

Daru P.H., Karshima J.A., Mikah S. , and Nyango D., (2011), The Burden of Vesico-Vaginal Fistula In North Central Nigeria,J West Afr Coll Surg. Apr-Jun; 1(2): 50–62. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4170260/

Dairo M.D., IbrahimT.F., SalawuA.T. (2017), Prevalence and determinants of diarrhoea among infants in selected primary health centres in Kaduna north local government area, Nigeria, The Pan African Medical Journal, 2017;28:109. doi:10.11604/pamj.2017.28.109.8152

Easterly W. (2009), How the millennium development goals are unfair to Africa. World Development, 7(1):26–5. doi:10.1016/j.worlddev.2008.02.009.

Easterly W., (2010), Was Africa set up to fail on the Millennium Development Goals? http://www.nyudri.org/aidwatcharchive/2010/06/was-africa-set-up-to-fail-on-the-millenniumdevelopment-goals

Ejembi, C. (2009). "Problems Associated with VVF". Paper presented at the National workshop on management and counseling of VVF patients, June 22 – 25 at Liyafa Hotel, Katsina.

Erhabor O., Adias T.C and M.L. Hart (2010). Effect of falciparum malaria on the indices of anaemia among pregnant women in the Niger Delta of Nigeria. Journal of Clinical Medicine and Research, 2(3):035-041.

Ezeonu, P.O.,Ekwedigwe, K.C., Isikhuemen, M.E., Eliboh, M.O., Onoh, R.C., Lawani, L.O., Ajah, L.O. and Dimejesi, E.I. (2017) Awareness of Obstetric Vesicovaginal Fistula among Pregnant Women in a Rural Hospital. Advances in Reproductive Sciences, 5, 39-46. https://doi.org/10.4236/arsci.2017.53005

Harrison KA. (1985), Child-bearing, health, and social priorities: a survey of 22,774 consecutive deliveries in Zaria, northern Nigeria. Br J Obstet Gynaecol;92(suppl):1-119.

Ibrahim M, Odoemena D, Ibrahim M. (2000), Intestinal helminthic infestations among primary school children in Sokoto. Sahel Med J. 2000; 3(2):65-68. http://www.smjonline.org/article.asp?issn=1118-8561;year=2000;volume=3;issue=2;spage=65;epage=68;aulast=Ibrahim;type=0

Hassan, A. (2013). "VVF A Scourage that refuse to go". New Nigeria on Sunday 20th, pp. 16 – 17.

Hassan MA, and Ekele BA. (2009), Vesico vaginal fistula: Do he patients know the cause? Ann Afro med; 8(2)122-6.

Imelda, (2015) Repair of Vesico Vaginal Fistula. Report on 140 case, J. Urol 89, 220, 231

Isiah, (2016) "Women's Health across age and frontier (WHO) Switzerland page 11 – 16.Johnson, K. (2007). Incontinence in Malawi: Analysis of proxy measure ofVaginal fistula in national survey. International Journal of Gynecology andObstetrics 3,9.

Jenavine O. Mbah, Njoku O. O, Agwu U. Nnachi, Ijem A. Nnachi, Amacchi J. Nwinyimagu (2015). Incidence of antenatal malaria parasitaemia and the effects on the haemoglobin profile of the pregnant women in Enugu East Local Government Area, Enugu, Nigeria. American Journal of Epidemiology and Infectious Disease, 3(5): 88-94

Kasamba N., Kaye D., and Mbalinda S., (2013), Community awareness about risk factors, presentation and prevention and obstetric fistula in Nabitovu village, Iganga district, Uganda, BMC Pregnancy Childbirth. 2013; 13: 229. doi: 10.1186/1471-2393-13-229

Kees, W. (2007). Step – by – Step Surgery of Vesico Vaginal Fistulae, Thomas Color Printer Limited, Glasgow, Scotland.

Kees, W. (2016).Prevalence of Obstetric Fistulae in northern Nigeria (Report). Retrieved February 3 2013 from http:// www.fistularepair .com.

*Kharsany A.B.M. and Karim Q.A., (2016), HIV Infection and AIDS in Sub-Saharan Africa: Current Status, Challenges and Opportunities, Open Aids Journal, **1**0: 34–48. doi: 10.2174/1874613601610010034*

Murphy M. (2008) Social Consequences of Vesico Vaginal Fistula in Northern Nigeria J.BiosocSci 13:139:150.

Nigeria Centre for Disease Control, (2017), Ebola, Nigeria Centre for Disease Control, Abuja, Nigeria, https://ncdc.gov.ng/diseases/info/E

Omiunu O.G. (2015), Information awareness and utilization of haematinics among pregnant women in Nigeria, Basic Research Journals, 4(10), pp 240-247, http://www.basicresearchjournals.org.

*Spurlock J. (2016), Vesicovaginal Fistula**,** https://emedicine.medscape.com/article/267943overview*

*Stamatakos M., Sargedi C., Stasinou T., and Kontzoglou K. (2012), Vesicovaginal Fistula: Diagnosis and Management**,** Indian J Surg. 76(2): 131–136. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4039689/*

Tebeu PM, de Bernis L, Boisrond L, Le Duc A, Mbassi AA, Rochat CH.(2008), Knowledge, attitude andperception about obstetric fistula by Cameroonian women. Prog Urol, 18(6):379-89.

The Guardian (2002 September 9) Easing the scourge of VVF. Nigeria Guardian Newspapers p 7.

The International Bank for Reconstruction and Development. The MDGs after the Crisis, The World Bank. (2010). Available from: http://siteresources.worldbank. org/ INTGLOMONREP2010/ Resources/6911301

United Nations Population Fund UNFPA (2015). Fistula fortnight 21st Feb. – 6 March, inKatsina State.

Waaldijk K. (2004), Immediate Management Of Fresh Obstetric Fistulae. Am J Obstet Gynecol. 2004; 191(3): 795–799. https://www.ncbi.nlm.nih.gov/pubmed/15467543

Wall LL. 'Fitsari Dan Duniya': An African (Hausa) Praise Song About Vesico-Vaginal Fistula Obstet. Gynecol . 2002;100(2):1328–1332.

Wall L.L., Karshima J.A., Kirschner C. and Arrowsmith S.D. (2004), The obstetric vesicovaginal fistula: Characteristics of 899 patients from Jos, Nigeria, American Journal of Obstetrics and Gynecology (2004) 190, 1011-1019, http://irepos.unijos.edu.ng/jspui/bitstream/123456789/755/1/The%20obstetric%20vesicovaginal%20fistula.pdf